

What is claimed is:

1. A thin film bonding method for bonding a thin film to a target surface by using an adhesive agent, including the steps of:

5 (A) applying the adhesive agent onto the target surface and placing the thin film onto the target surface;

(B) applying a fluid pressure onto the target surface and the thin film from a central portion to an circumference thereof, so as to gradually proceed the bonding of the thin film and the target surface with the lapse of the time; and

10 (C) hardening the adhesive agent.

2. The method of claim 1, wherein the (B) step includes:

(B1) applying a magnetic suspension containing fine magnetic particles on the thin film;

15 (B2) conveying a compressive force generated by a magnetic force generating means positioned under and adjacent to the target surface and installed movable in a diameter direction thereof to convey the magnetic compressive force onto the thin film and the target surface from the central portion to the circumference thereof, while rotating the target surface and the thin film, so as to gradually proceed the bonding of the thin film and the target surface; and

20 (B3) removing the applied magnetic suspension.

3. The method of claim 1, wherein the (B) step includes:

(B1) applying the fluid pressure by using a fluid supplying means installed

25 at the upper surface of the thin film and the target surface and movable in a

diameter direction thereof to apply the fluid pressure onto the thin film and the target surface from the central portion to the circumference thereof, while rotating the target surface and the thin film at a high speed, so as to gradually proceed the bonding of the thin film and the target surface.

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4. A bonding method of an optical disk for bonding a thin film on a first substrate, including the steps of:

(A) placing a thin film on the first substrate with an adhesive agent therebetween;

10 (B) rotating the first substrate and a thin film while applying a fluid pressure to the first substrate and a thin film according to lapse of time from the central portion to the circumference thereof to allow bonding between the first substrate and a thin film to proceed in a spiral direction thereof; and

15 (C) hardening the adhesive agent.

5. The method of claim 4, wherein the (B) step includes:

(B1) applying a magnetic suspension containing fine magnetic particles on the thin film;

20 (B2) conveying the compressive force generated by a magnetic force generating means positioned under and adjacent to the first substrate and installed movable in a diameter direction thereof to convey the magnetic compressive force onto the thin film and the first substrate from the central portion to the circumference thereof, while rotating the thin film and the first substrates, so as to gradually proceed the bonding of the first substrate and the thin film; and

25 (B3) removing the applied magnetic suspension.

6. The method of claim 4, wherein the step (B) includes:

(B1) applying the fluid pressure by using a fluid supplying means installed at the upper surface of the thin film and the first substrate and movable in a 5 diameter direction of the thin film, from the central portion to the circumference thereof, while rotating the first substrate and the thin film, so as to gradually proceed the bonding of the first substrate and the thin film.

7. The method of claim 6, wherein the first substrate and the thin film

10 are rotated to maintain a constant linear velocity.

8. The method of claim 6, wherein air is used as the fluid.

9. The method of claim 6, wherein nitrogen is used as the fluid.

15 10. The method of claim 4, wherein the adhesive agent layer is uniformly applied on the thin film mounted on the first substrate by a separate process.

20 11. A bonding apparatus of the optical disk including:

a rotational shaft integrally coupled to a drive motor generating a rotational force;

a disk support member coupled to one side of the rotational shaft, on which a first substrate is mounted;

25 a first nozzle positioned at a portion of the upper side of the disk support

member to supply an adhesive agent onto an upper surface of the first substrate mounted at the disk support member;

5 a pressure supplying means for applying a fluid pressure to the first substrate and a thin film mounted on the first substrate with the adhesive agent therebetween according to lapse of time from the central portion to its circumference to allow bonding between the first substrate and a thin film to proceed in a spiral; and

irradiation means for irradiating ultraviolet rays to harden the adhesive agent applied between the first substrate and the thin film.

10 12. The apparatus of claim 11, wherein the pressure supplying means including:

a second nozzle for supplying a magnetic suspension containing fine magnetic particles on a thin film;

15 a magnetic force generating means movably installed adjacent to a lower portion of the first substrate and applying a magnetic compressive force onto the first substrate and a thin film; and

a guide rail for guiding the magnetic force generating means to be movable in a diameter direction of the first substrate.

20 13. The apparatus of claim 11, wherein the pressure supplying means includes a second nozzle installed movable in the diameter direction on a thin film and spraying the fluid on the thin film being rotated at a high speed from the central portion to the circumference thereof.

14. The apparatus of claim 11, wherein when a fluid pressure is applied to the first substrate and the thin film, the drive motor is rotated so that the disk support member can maintain a constant linear velocity.

5 15. The apparatus of claim 13, wherein air is used as the fluid.

16. The apparatus of claim 13, wherein nitrogen is used as the fluid.

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